STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PROPOSED AMENDMENTS TO 20.6.2 NMAC, THE COPPER MINE RULE

No. WQCC 12-01(R)

New Mexico Environment Department,
Petitioner

WRITTEN TESTIMONY OF WILLIAM C. OLSON

My name is William C. Olson, and I am presenting this written testimony in the New Mexico Water Quality Control Commission (Commission) rule-making hearing case No. WQCC 12-01(R). I am testifying as a private citizen interested in the protection of New Mexico's water resources. I am presenting this written technical testimony in response to the New Mexico Environment Department (Department) petition for copper mine industry specific rules filed with the Commission on October 30, 2012.

I. BACKGROUND AND EXPERIENCE

I have a Bachelor of Science degree in Geology, and a Master of Science degree in Hydrology from the New Mexico Institute of Mining and Technology, and over 26 years of work experience related to ground water discharge permits and remediation of contaminated ground water under Commission and New Mexico Oil Conservation Division (NMOCD) rules.

Since January of 2012, I have been a private consultant on water quality issues in New Mexico. From mid-March of 2012 through November of 2012, I assisted the Department on the development of the Copper Mine Rule.

Prior to 2012, I worked for 25 years in state government on water quality issues with both the Department and the NMOCD.

I held the position of Bureau Chief of the Ground Water Quality Bureau with the Department from October of 2004 to November of 2011. As Bureau Chief, I was responsible for supervising and managing personnel of the Ground Water Quality Bureau's Mining Environmental Compliance Section, Pollution Prevention Section, Remediation Oversight Section, Superfund Oversight Section, and Grants and Planning Section. My duties included directing the permitting and enforcement of discharge permits and abatement of ground water pollution pursuant to the New Mexico Water Quality Act (WQA) and Commission rules; remediation of contaminated properties pursuant to the Voluntary Remediation Act and Voluntary Remediation Regulations; remediation of abandoned sites in support of the U.S. Environmental Protection Agency (EPA) Superfund Program; and implementation of the Department's responsibilities under the New Mexico Mining Act. I also led the Department team that developed the Dairy Rules that were adopted by the Commission in January of 2012.

Prior to my term as Bureau Chief of the Ground Water Quality Bureau, I was a hydrologist for the NMOCD Environmental Bureau from 1990 to 2004. In this capacity, I implemented and enforced the WQA and Commission Rules related to discharge permitting and abatement of ground water pollution at refineries, natural gas processing plants, natural gas compressor stations, brine extraction wells and oilfield service companies. I also implemented and enforced NMOCD water quality protection permit and pollution abatement rules adopted pursuant to the New Mexico Oil and Gas Act (Oil and Gas Act) for oilfield exploration, development, production and disposal sites. Additional duties included conducting ground water studies, rule development and serving as an expert witness for water quality protection rules related to the oilfield industry.

From 1988 to 1990, I worked for the New Mexico Environmental Improvement Division's Ground Water Quality Bureau as a hydrologist and from 1986 to 1988 I worked for the NMOCD as a hydrologist. Both of these jobs involved discharge permitting and abatement of water pollution under Commission rules.

I previously served on the New Mexico Water Quality Control Commission as the designee of the NMOCD for a period of approximately 13 years, and later served on the New Mexico Oil Conservation Commission as the designee of the Secretary of the Energy Minerals and Natural Resources Department for a little over 5 years. During service on both of these commissions, I participated in the adoption of a number of water quality protection rules under both the WQA and Oil and Gas Act.

A copy of my resume is marked as **WCO Exhibit 2.** It is accurate and up-to-date.

II. INTRODUCTION

This hearing is fundamentally about protection of ground water resources in New Mexico through the adoption of industry specific rules for copper mines. New Mexico is an arid state, with limited water resources. It is growing and developing rapidly, placing an increasing demand on those limited resources. New Mexican's obtain approximately 90 percent of their drinking water from ground water sources. It is therefore extremely important that we protect those resources. Towards that end, the Legislature enacted the WQA and subsequently the Commission adopted regulations to protect all surface and subsurface waters in New Mexico. Recent amendments to the WQA by the legislature in 2009 have required that the Commission conduct this rule-making process to specify in rules the measures to be taken to prevent water pollution and monitor water quality.

As I discussed in the previous section on my background, I participated in the rule development process conducted in 2012. I support the need for the adoption of these rules. Extensive contamination of ground water resources has occurred from copper mine facilities in the State of New Mexico. Voluminous information on water pollution from copper mine discharge activities has been presented to the Commission at numerous hearings over the past ten years on the Tyrone Mine site near Silver City, New Mexico.

I support the majority of the content of the rule as presented. However, I wish to provide testimony on what I believe is a major defect in the rule that will not prevent water pollution as statutorily required by the WQA. As proposed by the Department, the Copper Mine Rule adopts a point of compliance concept that allows a permittee to create new cases of extensive pollution of ground water by rule. According to the Department proposed rule, waste rock and tailings would be placed in unlined facilities and allowed to deliberately cause ground water contamination in excess of Commission standards as long as ground water pollution is intercepted and pumped out of the aquifer downgradient of the disposal unit. Compliance with the water quality standards would then be measured even further downgradient of the ground water interceptor system. Unlined copper leaching facilities and waste rock stockpiles would be allowed to intentionally cause ground water pollution by rule. I will present testimony on the WQA, Commission rules, historical precedent of the Commission and its constituent agencies, place of withdrawal litigation, an analysis of why this concept is not consistent with the statute and other Commission rules and actions, and should not be adopted as proposed.

I will also present detailed testimony in support of specific modifications to the proposed rule that provides a mechanism for consideration of these types of disposal activities through variances that is consistent with Commission authority and rules and includes a public

participation process. For the readers convenience, **WCO Exhibit #3** presents the text of each proposed rule modification in track changes formatting immediately followed by written testimony in italics explaining and supporting the proposed modification.

My testimony is contained in exhibits marked **WCO Exhibit #1-17** and constitutes my written direct testimony on the Copper Mine Rule.

III. WATER QUALITY ACT

In this section I present the relevant portions of the WQA that conflict with the Department's point of compliance concept to allow a permittee to cause new water pollution by rule as long as the exceedance of water quality standards is measured at some distance downgradient of the polluting facility.

The WQA is the primary statute that governs protection of ground water quality in the State of New Mexico. The WQA was originally adopted in 1967 and created the Commission. The majority of the WQA as seen today that relates to discharge permitting for ground water quality protection was adopted in the 1970's.

One of the main functions of the Commission's duties and powers under the WQA is to adopt rules to *"prevent or abate water pollution"* as set out in 74-6-4.E NMSA 1978. It is clear that the Commission when adopting specific rules for discharge permits for copper mine facilities must prevent water pollution.

To allow for flexibility in applying adopted rules, the WQA in 74-6-4.H NMSA 1978 gives the Commission the authority to grant exceptions to its rules subject to limitations after a public hearing. In particular, 74-6-4.H NMSA 1978 specifies, *"The commission may only grant a variance conditioned upon a person effecting a particular abatement of water pollution within*

a reasonable period of time. Any variance shall be granted for the period of time specified by the commission. The commission shall adopt regulations specifying the procedure under which variances may be sought, which regulations shall provide for the holding of a public hearing before any variance is granted". This provision contemplates that there are circumstances under which a permit applicant may be allowed, through the granting of a variance, to cause temporary pollution of water as long as it is abated within a reasonable period of time. Under this provision, a person is limited from being granted approval of a variance that allows permanent or long-term water pollution

Another significant provision of the WQA in 74-6-5.E(3) NMSA 1978 requires that the constituent agency deny a discharge permit if *"the discharge would cause or contribute to water contaminant levels in excess of any state or federal standard. Determination of the discharge's effect on ground water shall be measured at any place of withdrawal of water for present and reasonably foreseeable future use".* The WQA explicitly prohibits approval of a discharge permit that allows ground water to be contaminated above water quality standards at *"<u>any</u> place of withdrawal of water for present or reasonably foreseeable future use".* The Commission has already addressed this issue in prior litigation related to the Tyrone Mine and determined that the aquifers underlying the Tyrone Mine are places of withdrawal of water for present or reasonably foreseeable future use. I will address this case in more detail later in my testimony.

Another limitation under the WQA in 74-6-12.F NMSA 1978 states, *"reasonable degradation of water quality resulting from beneficial use shall be allowed. Such degradation shall not result in impairment of water quality to the extent that water quality standards are exceeded".* This statutory provision allows some degradation of ground water but prohibits degradation in excess of the water quality standards. Existing Commission rules reflect this in

sections on approval of discharge permits such as 20.6.2.3109.C NMAC and numerous other sections of Commission rules that reference compliance with standards as part of an action to be taken.

Recently, in 2009, the WQA was amended to allow the Commission to adopt industry specific rules that were not previously allowed under the statute. Prior to the 2009 WQA amendments, the permitting process was based on a model where an applicant for a discharge permit would propose a plan to protect ground water for the Department's review. There was no guidance or specificity in the rules for the measures to be taken to protect water quality except that the plan as proposed by the applicant must demonstrate that the proposed plan will not cause an exceedance of the Commissions ground water quality standards. The 2009 WQA amendments initiated a paradigm shift in the rulemaking and permitting process. Most significantly, the 2009 amendments inserted a new Subsection K in Section 74-6-4 NMSA 1978 that allows the Commission to adopt regulations specific to particular industries, and directed the Commission to promulgate industry specific rules for the dairy industry and the copper industry. The 2009 amendments deleted the prior provision in the WQA in 74-6-4.D NMSA 1978 stating that *"regulations shall not specify the method to be used to prevent or abate water pollution"*, Instead, the 2009 amendments inserted in a new Subsection K of Section 74-6-4 of the WQA language stating that the Commission *"shall specify in regulations the measures to be taken to prevent water pollution and to monitor water quality"*. The 2009 amendments requiring adoption of industry specific rules for copper mines are the reason that the Department is before you today with a proposed Copper Mine Rule. It is clear from the recent 2009 amended statutory language in 74-6-4.K NMSA 1978 that the main purpose of these Commission hearings is to adopt specific rules for copper mines to prevent water pollution. The 2009 amendments do not

make allowances for point of compliance concepts that intentionally allow pollution to occur at copper mines.

Based upon the above statutory requirements within the WQA, allowing copper mine discharges to deliberately cause ground water pollution in excess of Commission standards and capturing the ground water pollution with interceptor wells downgradient of the disposal unit violates the language of the WQA and authority granted the Commission. In addition, any permit application that causes ground water pollution in this manner would be mandated to be denied pursuant to 74-6-5.E(3) NMSA as discussed above.

IV COMMISSION RULES

Pursuant to authority granted to the Commission under the WQA, the Commission held rulemaking hearings in 1976 and subsequently in 1977 adopted rules for permitting of discharges. Below I will discuss how the rules promulgated by the Commission are consistent with the statutory requirements I discussed above for preventing and abating pollution of ground water.

As set out in 20.6.2.3101.A NMAC, the purpose of the discharge permitting rules *"controlling discharges onto or below the surface of the ground is to protect <u>all ground water</u> of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply . ."* You will notice I placed emphasis on the words "all ground water". This language clearly shows that all ground water is to be protected under the permit consistent with the provisions of the WQA.

As set out in 20.6.2.4101.A NMAC, the purpose of the Commission rules on prevention and abatement of water pollution is to *"abate pollution of subsurface water so that <u>all ground</u>*

water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, is either remediated or protected for use as domestic and agricultural water supply .....". You will notice that again I placed emphasis on the words "all ground water". This language clearly shows that all ground water is to be remediated and protected in the abatement of water pollution consistent with the provisions of the WQA.

There are numerous areas of the Commission rules that link to the WQA's *"place of withdrawal"* requirement in 74-6-5.E(3) NMSA 1978. Both discharge permits and abatement plans (which could also be required for a permitted facility that causes ground water pollution) must consider whether ground water is protected at a *"place of withdrawal of water for present and reasonably foreseeable future use"* or an application must be denied. The portions of the Commission rules that relate to this are:

- 20.6.2.7.AA NMAC in the definition of *"hazard to public"* which links *"place of withdrawal"* to a determination of whether a hazard to public health exists. This definition is later related to whether a permit can be approved;
- 20.6.2.3103 NMAC numeric water quality standards, which provides that discharges *"will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section";*
- 20.6.2.3109.E NMAC and 20.6.2.3109. E(1) NMAC which allows the agency to modify a permit to abate water pollution based upon an exceedance of the 20.6.2.3103 standards linked to *"place of withdrawal";*
- 20.6.2.3109.H NMAC where a permit must be denied for *"the discharge of any water contaminant which may result in a hazard to public health ."* whose definition is tied to *"place of withdrawal"* language;

- 20.6.2.4103.B NMAC where ground water abatement standards link back to the 20.6.2.3103 NMAC numeric water quality standards, which are linked to *"place of withdrawal"*;
- 20.6.2.4106.E NMAC where design of a Stage 2 abatement plan links back to attainment of the 20.6.2.3103 NMAC numeric water quality standards, which are linked to *"place of withdrawal"*;
- 20.6.2.4109.F NMAC where Stage 2 abatement plan approval links back to attaining the 20.6.2.3103 NMAC numeric water quality standards, which are linked to *"place of withdrawal"*; and
- 20.6.2.4112 NMAC where approval of completion of abatement links back to attaining the 20.6.2.3103 NMAC numeric water quality standards, which are linked to *"place of withdrawal"*.

Pursuant to its authority under the WQA, the Commission has also promulgated different types of variance rules. One rule in 20.6.2.4103 NMAC allows a method for seeking alternative abatement standards that can exceed the Commission's numeric standards under 20.6.2.3103 NMAC under certain circumstances. In order to obtain alternative abatement standards, the discharger must be in the process of abatement, then petition the Commission, and the petition may be granted only after a public hearing. In a second rule, there is a mechanism for considering site-specific variances to Commission rules in 20.6.2.1210 NMAC that contains provisions for individual variances in accordance with Section 74-6-4.H NMSA 1978 of the WQA. In these cases, the Commission may only grant variances after a public hearing and the variance terms are limited to five-year period. In addition, in a third case, the recent Dairy Rule, in 20.6.6.18 NMAC the Commission adopted a new variance rule for dairy facilities that allows

for alternate discharge designs consistent with the WQA. This variance rule offers some expanded criteria for consideration, allows variances to be granted for the useful life of the feature and provides for 5-year review of the effectives of the variance.

In summary, these existing rules all provide for protection of ground water throughout the permitted site consistent with the WQA. The Department proposed concept of allowing contamination and measuring compliance at a point of compliance away from the source area is not consistent with WQA or the above-discussed Commission rules.

V HISTORICAL GROUND WATER PROTECTION IN NEW MEXICO

There is a 46-year history of protecting all ground water in the State of New Mexico with the presumption that all ground water is to be protected from contamination unless it can be demonstrated that it does not have a present or foreseeable future use. In 1967 the State Engineer provided a letter to the New Mexico Oil Conservation Commission declaring that *"All underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids is hereby designated by the State Engineer pursuant to 65-3-11.(15) N.M.S.A., 1953 Compilation; except that this designation shall not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination"* **(See WCO Exhibit #4)**. This designation was used during an April 19, 1967 Oil Conservation Commission (OCC) hearing in support of OCC Order 3221, one of the early ground water pollution prevention measures taken in New Mexico.

In response to the 1973 amendments to the Water Quality Act, the Commission in 1977 adopted new rules that included discharge permitting and ground water standards. The purpose of the permitting rules as set out in 20.6.2.3101.A NMAC was for *"controlling discharges onto*

or below the surface of the ground [is] to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply . . "

In 1985, the NMOCD requested an update of the State Engineer 1967 ground water determination. The State Engineer reaffirmed his 1967 determination that *"all underground waters"* were to be protected from contamination **(See WCO Exhibit #5 And WCO Exhibit #6).**

On February 26, 1987, the Director of the Environmental Improvement Division (predecessor to the Department) provided comments to the EPA on the 1986 final draft of Guidelines for Ground-Water Classification under the EPA Ground-Water Protection Strategy **(See WCO Exhibit #7).** In his comments, the Director stated that *"Protected under the regulations for present and potential future use as domestic and agricultural water supply is all ground water having a concentration of 10,000 mg/l or less total dissolved solids (TDS)"* (See WCO Exhibit #7, page 2). He also stated that, *"The WQCC system gives the same protection to present and potential future uses of ground water"* **(See WCO Exhibit #7, page 4).** In addition, he stated that, *"The WQCC system has been in use in New Mexico for ten years since 1977. Experience has shown that this relatively clear and easily understood system is very effective in protecting ground water quality in the state"* **(See WCO Exhibit #7, page 4).**

I would also like to add that I worked for 25 years on implementing and enforcing the WQA and Commission rules for prevention and abatement of water pollution for both of the constituent agencies that enforce Commission rules. From the start of my employment with the NMOCD in 1986, I was trained that in New Mexico ground water is a public resource of the state and that all ground water is protected from contamination from discharges of water

contaminants unless that applicant or permittee can demonstrate that the water does not have a present or foreseeable future use. That permitting and abatement interpretation was followed throughout my career with both the New Mexico Oil Conservation Division and the Department up until my retirement as Bureau Chief of the Ground Water Quality Bureau of the Department in 2011. I have worked on most types of discharge site in the state and this was a consistent interpretation on behalf of the state agencies for those 25 years.

VI PLACE OF WITHDRAWAL LITIGATION

The WQA and the Commission rules as they exist today do not define the term *"place of withdrawal of water for present or reasonable foreseeable future use"* nor do they give direction as to how to determine where this area exists. However, extensive litigation over *"place of withdrawal"* related to the closure permit for the Tyrone Mine resulted in a 2009 Commission order that determined this issue as discussed below. This order of the Commission is still in effect and defines "place of withdrawal" at the Tyrone Mine.

A. Tyrone Mine Closure Permit Litigation

The language "*place of withdrawal of water for present and reasonably foreseeable use*" under the WQA, as it was subsequently adopted by the Commission, was the subject of technically complex litigation in adjudicatory permit hearings before the Department and the Commission for over a decade.

In the early 2000's, the Tyrone Mine (at that time operated by Phelps Dodge Tyrone, Inc. and currently operated by Freeport McMoran Tyrone) objected to the Department's conditions of approval contained in the Department's draft closure permit for the Tyrone Mine. A major point of contention was that the Department conditions of approval for the closure permit applied to

ground water at all places within the mine. This objection led to a 10-day evidentiary hearing before the Department in 2002. In 2003, the Department issued a 106 page Hearing Officer's Report and 307 pages of Findings of Fact and Conclusions of Law and a the closure permit for Tyrone based on the Hearing Officer's report, findings and conclusions.

Tyrone appealed the Department issued closure permit to the Commission on July 3, 2003. The Commission held another 10-day evidentiary hearing in October and November of 2003. For those hearings, I served on the Commission as a designee of the New Mexico Oil Conservation Division, and attended the evidentiary hearings and participated in the Commission deliberations. The Commission subsequently issued a decision in 2004 upholding the Department approved permit and concluding that the Tyrone Mine was a "place of withdrawal," and that all ground water underneath the Tyrone Mine was required to be protected under the WQA.

Tyrone was unsatisfied with this decision and appealed the Commission's decision to the New Mexico Court of Appeals. In 2006, the Court of Appeals issued a decision that upheld all portions of the Department approved closure permit for the Tyrone Mine with the exception of conditions 4 and 17 of the permit. The Court of Appeals remanded conditions 4 and 17 of the discharge permit to the Commission concluding that the Commission decision that the entire mine site is a place of withdrawal was overly broad. The remand directed the Commission to conduct further proceedings to *"create some general factors or policies to guide its determination"* as to what constitutes a *"place of withdrawal"* under the WQA **(See WCO Exhibit #8, page 18)**. The court also decided to *"decline to adopt as a standard a "point of compliance"* concept for the purposes of protecting ground water quality standards, as Tyrone had urged **(See WCO Exhibit #8, page 19).**

In response to the Court of Appeals remand of conditions 4 and 17 of the Tyrone Permit, in 2007 the Commission held 24 days of hearings on the issue of *"place of withdrawal"*. At this time, I was employed as the Bureau Chief of the Water Quality Bureau of the Department and was the lead witness for the Department in the Commission hearings. In these hearings, the Department presented extensive testimony on proposed criteria that are relevant and useful to the determination of whether there is a present or reasonably foreseeable future use of ground water at and around the Tyrone Mine **(See WCO Exhibit #9, pages 4-11)**. The criteria were selected to be relatively general and neutral criteria that would not be controversial, cover a broad range of issues that the Commission needs to consider in making these types of decisions, and could be applicable to any site or type of facility. The Department proposed criteria were:

(1) Site hydrology and geology;

(2) The quality of ground water prior to any discharge from that facility;

(3) Past and current land use in the vicinity;

(4) Potential future land use in the vicinity;

(5) Past and current water use in the vicinity;

(6) Potential future water use in the vicinity; and

(7) Population trends in the vicinity.

The Department also presented extensive technical testimony on the application of these criteria to the Tyrone Mine and maintained that under these criteria ground water underneath the Tyrone mine site was a "place of withdrawal", and required protection from contamination in excess of Commission standards **(See WCO Exhibit #9, pages 22-24)**. Tyrone proposed alternate criteria and took the position that lands inside the 12,500 acre Mining and Minerals Division permit

boundary for the Tyrone Mine were not places of withdrawal, and that the Commission water quality standards did not apply.

The Commission issued its decision on February 4, 2009 **(WCO Exhibit #10)** The Commission decided that the WQA protected ground water at *"any place of withdrawal for present and reasonably foreseeable future use."* and that the WQA "does not establish any specific 'point(s) of compliance' for compliance with water quality standards" **(WCO Exhibit #10, page 80)**. The Commission also adopted the criteria for determining *"place of withdrawal"* as proposed by the Department **(WCO Exhibit #10, pages 78-80)**. In addition, the Commission applied these criteria and made a number of determinations in support of the Department's testimony **(WCO Exhibit #10, page 80-84)** and determined that *"the regional and alluvial aquifers underlying portions of the Tyrone mine site are places of withdrawal of water for present and reasonable foreseeable future use pursuant to Section 74-6-5(E)(3)."* **(WCO Exhibit #10, page 81, paragraph 33)**. Finally, the Commission held that if *"it is not technically feasible for water quality standards to be met underneath the Tyrone Mine, the appropriate remedy for Tyrone is to seek alternative abatement standards under the Commission Regulations at section 20.6.2.4103.F NMAC."* **(WCO Exhibit #10, page 84, paragraph 52)**.

Tyrone was again unsatisfied with the Commission decision and again appealed the decision to the Court of Appeals in March of 2009.

B. Tyrone Settlement

The March 2009 Tyrone appeal to the Court of Appeals has been currently been stayed pending implementation of a Settlement Agreement and Stipulated Final Order (Tyrone Agreement) finalized between the Department and Freeport-McMoRan Tyrone on December 20, 2010 **(WCO Exhibit #11)**. At that time, I was the Bureau Chief of the Ground Water Quality

Bureau of the Department and assisted in the negotiation of the settlement. The Tyrone Agreement is consistent with the requirements of the WQA, the Commission's rules, historical precedent of the Commission and its constituent agencies, and the Commission's February 4, 2009 Decision and Order on Remand in the Tyrone Mine litigation. The Tyrone Agreement requires Tyrone to meet water quality standards at its mine site or alternate abatement standards **(WCO Exhibit #11, pages 8-9, paragraphs 26-28; page 11, paragraph 35; and page 13, paragraph 43(a))**. Most importantly, the Tyrone Agreement allows a mechanism for Tyrone to request variances from water quality standards during operations for existing and new facilities and to petition the Commission for alternative abatement standards upon closure, consistent with the requirements of the Commission's Decision and Order on Remand. Finally, the Tyrone Agreement establishes an *"Open Pit Surface Drainage Area"*, similar to that proposed in 20.6.7.7.B(42) NMAC of the Copper Mine Rule. In this area, some latitude may be given to construction of facilities that do not employ full technological controls for the protection of ground water through the variance process as long as water pollution is abated to applicable standards upon closure **(WCO Exhibit #11, page 6, paragraph 19 and pages 12-14)**.

VII ANALYSIS OF COPPER MINE RULE DEFECTS

As stated earlier I support the majority of the content of the rule as presented. However, I do not support the below major sections of the Copper Mine Rule as proposed by the Department that would allow intentional discharges of water contaminants to pollute ground water in excess of Commission standards. Nor do I support the below sections that institute a point of compliance concept that would expressly allow large scale contamination to occur by measuring the contamination at some distance away from a source of discharge. There is

additional detailed testimony regarding each provision below in my proposed Copper Mine Rule modifications in **WCO Exhibit #3** including testimony on some lesser problems identified in the rule language as well as proposed modifications to correct these deficiencies.

- 20.6.7.20.A(1)(f) NMAC allows construction of new unlined leach stockpiles within an open pit surface drainage area without a variance.
- 20.6.7.20.B(2)NMAC, 20.6.7.21.C(2) NMAC and 20.6.7.22.B(2) NMAC creates blanket exemptions for existing leach stockpiles, waste rock stockpiles piles and tailing impoundments that have failed and resulted in water pollution in excess of Commission standards. By rule, they are allowed to continue to pollute ground water without a variance.
- 20.6.7.21.B NMAC and 20.6.7.22.A(4) NMAC allow construction of new unlined waste rock stockpiles and new unlined tailing impoundments that intentionally cause water pollution as long as contaminated ground water downgradient of the facility is pumped and captured by ground water interceptor well systems.
- 20.6.7.28.B(2) NMAC creates a point of compliance concept by allowing monitoring wells for waste rock stockpiles and tailing impoundments to be located some distance downgradient of ground water interceptor well systems designed to capture polluted ground water, and which is itself downgradient of the discharging facility.
- 20.6.7.21.B(1)(d) NMAC creates a point of compliance concept by limiting applicability of standards at waste rock stockpiles to a monitoring well located pursuant to 20.7.28.B(2) that as discussed above is some distance downgradient of the ground water interceptor well systems designed to capture polluted ground water, which is itself downgradient of the discharging facility.

- 20.6.7.33.D(2) NMAC creates a point of compliance concept for a flow-through pit upon closure by allowing determination of compliance with applicable standards only at a designated monitoring well location. The designated monitoring well is located pursuant to 20.7.28.B(4) NMAC that is some distance outside of the perimeter of the open pit. In addition, for a flow through pit, 20.6.7.D(2) NMAC does not require compliance with water quality standards in the open pit upon closure if ground water is managed and mitigated within the area of hydrologic containment. Management and mitigation of water pollution is abatement of water pollution.
- 20.6.7.33.F NMAC creates a point of compliance concept by allowing a determination of compliance with applicable standards for a cover system on any facility waste system to be only at a designated monitoring well location. For a waste rock stockpile or tailing impoundment the designated monitoring well is located pursuant to 20.7.28.B(2) that as discussed above is some distance downgradient of the ground water interceptor well system designed to capture polluted ground water, which is itself downgradient of the discharging facility.

The above Copper Mine Rules as proposed by the Department should not be approved for the following reasons.

A. Inconsistent with WQA, Commission Rules, Historical Ground Water Protection in New Mexico and Place of Withdrawal Litigation.

The Department proposed Copper Mine Rules listed above are inconsistent and in direct conflict with the WQA, other Commission rules, the historical application of the WQA and ground water protection rules in New Mexico, and the place of withdrawal litigation. I have extensively discussed these issues in my earlier testimony. There is additional testimony on

inconsistencies in my proposed modifications to specific rule language provisions as contained in **WCO Exhibit #3**. These rules would allow construction and operation of unlined facilities for the intentional pollution of ground water in excess of Commission standards underneath a permitted facility and downgradient of the facility to a point of compliance away from the discharge site. Such pollution could occur without the need for a variance as set out by statute and existing Commission rules. This includes the construction of future mines with underlying clean ground water, construction of new facilities at existing mines in areas that may contain clean water or continued operation of failed existing facilities that have contaminated ground water in excess of applicable standards. New facilities and failed existing facilities would be authorized by rule to pollute water. As discussed in my earlier testimony, the WQA explicitly and clearly requires prevention of pollution and not allowance of pollution. The intent of the WQA is reflected in the 35-year history of the ground water protection in New Mexico by the Commission and both of its constituent agencies.

As proposed, it appears that the Department, through a rule-making process, is attempting to eliminate a statutory requirement under 74-6-5.E(3) NMSA 1978 for a site-specific determination of what constitutes a "*place of withdrawal*". This is contrary to the WQA, historical precedent, the Commission's decisions in both the original Tyrone appeal and in the remand hearing on Tyrone, and the direction given by the Court of Appeals in its opinion on the Tyrone appeal. It is interesting that the Department takes this approach without addressing how to deal with the issue of "*place of withdrawal*" in the rule. This is surprising since it was a central issue of litigation related to issuance of the Tyrone mine closure permit for over ten years and the Court of Appeals directed the Commission to clarify this issue. In fact, the proposed rule is effectively making an advance determination that all future mine sites and all new mine

facilities at existing mines are not places of withdrawal without consideration of any site specific ground water factual information, including information on the use of ground water. This determination cannot be made since the facilities, locations, and site-specific conditions are unknown at this time.

As demonstrated in the Tyrone hearings, application of objective criteria for defining "*place of withdrawal*", as adopted by the Commission in their February 4, 2009 Decision and Order on Remand, is likely to lead to a determination that ground water has a present or reasonably foreseeable future use. Only in rare instances will ground water be found not to have a reasonably foreseeable future use. This is consistent with the intent and purpose of the WQA to protect state water resources by preventing and abating water pollution, and is necessary to meet the needs of New Mexico to protect its limited state water supplies now and into the future. Additionally, in its June 10, 2004 Order affirming the closure permit, the Commission adopted a rebuttable presumption that all ground water with less than 10,000 milligrams per liter TDS "*is protectable for present or reasonably foreseeable future use.*" The Court of Appeals did not disturb or overturn that conclusion **(See WCO Exhibit #8, page 17)**. This rule as proposed eliminates that rebuttable presumption and the need for a discharger to demonstrate that the ground water is not protectable thereby providing a copper mine a blanket exemption to pollute ground water without any type of *"place of withdrawal"* analysis.

If the rule is adopted as proposed by the Department there will be a direct conflict between the new Copper Mine Rule and the WQA including the potential for public hearings. When the Department attempts to approve a discharge permit pursuant to the Copper Mine Rule that allows pollution by rule from unlined discharge facilities, it is likely the public will challenge the permit. Since the WQA in 74-6-5.E(3) NMSA 1978 requires that a permit be

denied if the discharge would cause an exceedance of standards at any place of withdrawal of water for present or reasonably foreseeable future use, the public would have a good case to seek denial of a permit.

According to the proposed rule, ground water pollution from a waste rock stockpile or a tailing impoundment would only need to be measured at monitoring wells located downgradient of the associated downgradient ground water interceptor well system. For a flow through open pit compliance with water quality standards would be at a monitoring well network installed around the perimeter of the open pit a considerable distance from the open pit. This establishes a point of compliance concept in the rule allowing all ground water underneath and downgradient of the interceptor wells system or flow through pit to be polluted in excess of water quality standards -- contrary to the WQA and the Commission's prior decisions.

Under the Department's point of compliance concept, if the ground water from the downgradient point of compliance well or wells meet standards, then all ground water interior to these monitoring wells does not need to meet standards. Such ground water would effectively be "written off." It would not be prevented from being polluted nor protected. It would not need to meet standards. Such an interpretation is contrary to the purpose of the WQA, the Commission's Rules, historical precedent and Commission decisions in the Tyrone litigation. Ground water is not static; it moves. Contamination can spread. A future production well installed in a clean part of the aquifer, outside at a point of compliance could draw in contamination from a distance away. There is no basis in the statute or Commission rules for adopting the point of compliance concept. In addition, in implementing the WQA, the NMOCD does not apply a point of compliance concept.

B. Technical Feasibility and Water Rights

The authorization of pollution by rule from unlined tailing impoundments does not account for the fact that it is feasible to build lined tailing impoundments that prevent water pollution. Lining a tailings impoundment may be practical where a future mine site may not have the water rights to implement large-scale interceptor well systems. In fact, there is no requirement in the rule that an applicant or permittee provide proof that they have adequate water rights to operate an interceptor well system. The ground water contamination that will occur from a tailings impoundment is large scale and will be conducted over a very long time period. Consequently, a significant amount of water rights will be necessary to operate the ground water pumping system.

There is currently a future mine site that does not have extensive water rights for operating interceptor well systems downgradient of a tailings system, the proposed Copper Flats Mine near Hillsboro, New Mexico. New Mexico Copper Corporation is currently proposing to reopen the mine and was a member of the Copper Rule Advisory Committee and Copper Rule Technical Committee. On May 3, 2012, New Mexico Copper made a technical presentation to the Copper Rule Technical Committee regarding their proposed engineering design for a tailing impoundment, which included a liner system. A lined system is being proposed partly because of limited water rights for the mine site. This presentation on engineering design is similar to New Mexico Copper's proposed lined tailing impoundment design contained in operation plans submitted to the State of New Mexico Mining and Minerals Division, the Department, and the Bureau of Land Management **(See WCO Exhibit #12, Appendix D, pages 6-7 and drawings 1-9)**. This is also discussed in in my testimony regarding 20.6.7.22.A(4) in **WCO Exhibit #3**. Construction of lined facilities that prevent water pollution are feasible and practical and protect limited ground water supplies in New Mexico.

C. Potential for harm

It is the burden of the discharger to show that the site is not a place of withdrawal of water for present or reasonably foreseeable future use. This is consistent with the Commission intent in the initial adoption of the rules in 1977. Under existing Commission rules in 20.6.2.3109.C(2) NMAC, consistent with the WQA, the Department can approve a discharge permit only if the discharger demonstrates that the discharge will not result in an exceedance of standards at any place of withdrawal of water for present or reasonably foreseeable future use. This standard procedure was followed throughout the 25 years I worked for the Department and the New Mexico Oil Conservation Division in the implementation and enforcement of Commission rules. Under the Department proposed rules in 20.6.7.21.B(1)(d) NMAC and 20.6.7.22.A(4)(b) NMAC, the burden of proof would now be shifted to the agency to prove that ground water standards will be exceeded. This creates a new and strange rebuttable presumption that acid mine drainage from waste rock stockpiles and major mine contaminant sources such as a tailing impoundment do not cause water pollution unless the agency proves otherwise. This means that pollution of ground water must occur before it can be prevented. With the point of compliance concept proposed in the rule, the extent of pollution will likely become extensive before the Department can meet this requirement. Therefore, extensive harm to the state will occur through the loss of water resources. For example, if a new tailing impoundment were to be built comparable to Tailing Pond 7 at the Chino Mine, approximately 1,600 acres (or 2.5 square miles) of ground water resources underlying the impoundment would be lost at a minimum. That does not account for ground water contamination that has migrated outside the impoundment to the interceptor well system and its downgradient compliance monitoring well. This is a significant loss of public resources especially when approximately 90% of the residents

of the state rely on ground water as a source of drinking water and the state is experiencing high demand for its ground water resources due to severe drought.

The allowance of pollution by rule and the point of compliance concept as proposed in the rule will also potentially harm other water quality protection programs within the state. Copper mine sites are some of the largest discharge sites with extensive water pollution. If this proposed rule is approved for copper mines, the approximately 900 other Department facilities receiving discharge permits, and possibly oilfield facilities receiving discharge permits issued by the NMOCD, will seek that these rules apply equally to them. This includes discharge permits for:

- Molybdenum mines
- Uranium mines
- Dairies;
- Municipal waste water treatment plants;
- Industrial facilities;
- Power plants;
- Large scale domestic waste systems;
- Los Alamos National Laboratory;
- Waste Isolation Pilot Plant;
- Oil refineries;
- Natural gas processing plants;
- Natural gas compressor stations;
- Oilfield Service Companies;
- Brine wells; and

- Geothermal facilities

Expansion of pollution by rule and point of compliance concepts to other discharge permits would greatly increase the amount of lost ground water resources.

There are also other state programs that rely on the "place of withdrawal" approach to ground water pollution that could likewise be affected by approval of this proposed rule including:

- Hazardous waste permitting and cleanups under the Hazardous Waste Act; and
- Superfund site cleanup.

VIII. RULE MODIFICATIONS

I believe there are modifications that can be made to the problematic sections of the rule to make it consistent with the WQA and historical precedent and eliminate the problems that could occur as I have identified. I propose to remove language related to the point of compliance concept and keep the monitoring language consistent with current monitoring practice approved under existing discharge permits. I also propose to include requirements for lining of waste rock stockpiles and tailing impoundments unless the applicant seeks a variance. In addition, I propose to add a new section on variances to provide for a clear and transparent public process for consideration of site specific factors and designs such that approvals can be granted for the operational life of the facility. Finally, I propose some additional lesser modifications for clarity and consistency with the WQA and Commission rules. **WCO Exhibit #3** contains the text of each proposed rule modification presented in track changes formatting immediately followed by testimony in italics explaining and supporting each proposed modification.

IX. CONCLUSION

In conclusion, I support the Copper Mine Rule except as I have identified in my written direct testimony and exhibits. I recommend that the Commission adopt the proposed modifications that I have proposed to the rule for the reasons I have set out in my testimony.

Thank you. That concludes my direct testimony.

I, William C. Olson, swear that the foregoing is true and correct.

William C. Olson

Subscribed and sworn to before me this 22nd day of February, 2007 by William C. Olson.

Notary Public

OFFICIAL SEAL
MELANY E. TRUJILLO-VALDEZ
Notary Public
State of New Mexico
My Comm. Expires 4/26/2014

My commission expires:

4/26/2014